

AN EVALUATION OF LEVELS AND TYPES OF STRESS,
COPING STRATEGIES, PARTICIPATION IN ACTIVITIES
AND INTEREST IN ACTIVITIES OF JUNIOR HIGH
STUDENTS IN SELECTED SCHOOLS IN RURAL NEWFOUNDLAND

CENTRE FOR NEWFOUNDLAND STUDIES

**TOTAL OF 10 PAGES ONLY
MAY BE XEROXED**

(Without Author's Permission)

GLENYS L. WELLMAN, B.A. (Ed.), B.A.



AN EVALUATION OF LEVELS AND TYPES OF STRESS,
COPING STRATEGIES, PARTICIPATION IN ACTIVITIES
AND INTEREST IN ACTIVITIES OF JUNIOR HIGH STUDENTS
IN SELECTED SCHOOLS IN RURAL NEWFOUNDLAND

by

©Glenys L. Wellman, B.A.(Ed.), B.A.

A thesis submitted to the School of Graduate Studies
in partial fulfilment of the requirements
for the degree of
Master of Education

Department of Educational Psychology
Memorial University of Newfoundland
September 1990

St. John's

Newfoundland



National Library
of Canada

Bibliothèque nationale
du Canada

Canadian Theses Service Service des thèses canadiennes

Ottawa, Canada
K1A 0N4

The author has granted an irrevocable non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without his/her permission.

L'auteur a accordé une licence irrévocable et non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse à la disposition des personnes intéressées.

L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

ISBN 0-315-65350-7

Abstract

The purpose of this study was to examine the levels and types of stress of junior high students. In addition, the following stress-related factors were investigated: coping strategies, participation in activities and interest in activities.

Investigation of stress and coping strategies of children is of particular importance in the educational setting. Intervention and prevention programs would serve as valuable resources for young people who are experiencing emotional and physical problems associated with stress. In the past, the emphasis in research has been on stress as experienced by adults; studies involving children have been relatively limited.

Four scales were developed to measure the dependent variables of stress, coping, participation in activities and interest in activities. Scale I (measurement of stress) was further divided by means of factor analysis into five categories: Time Management; Intrapersonal; Locus of Control; Interpersonal; and Academic Expectations. The statistical package SPSS-X was used to analyze the data.

The sample consisted of grade seven, eight and nine students in four schools in the Green Bay Integrated School Board. The total number in the sample was 212 (94 males and 118 females).

The majority of the ten highest ranked stressors were school-related. The items in the Time Management and Intrapersonal categories contributed the most to levels of reported stress. The students reported a relatively low level of positive coping strategies. The activities in which they participated most were generally unstructured, passive pursuits. There was a high correlation between participation in activities and interest in those activities.

No significant differences were found between grade levels on either of the four dependent variables. There were significant sex effects, however, in three areas. Males had a higher reported level of stress than females, with a significant difference in the intrapersonal category. Females had higher levels of participation and interest in activities.

Recommendations were made in the areas of intervention (stress management programs) and prevention (improvement of school climate). Recommendations for further research included suggestions for modifications of the scales and more in-depth investigation into stress-related factors outside the scope of this study.

Acknowledgements

I wish to express my appreciation to those who helped me in various ways during the writing of this thesis. Special thanks are extended to Dr. Lee Klas, my advisor, for his interest and assistance and to Dr. Peter Chow for his invaluable help with the statistical aspects of the study. I would also like to thank the guidance counsellors, teachers, principals and superintendent of the Green Bay Integrated School Board who assisted in the administration of the questionnaire. The encouragement and support of my family and friends is also deeply appreciated.

Table of Contents

	Page
Abstract	ii
Acknowledgements	iv
List of Tables	vii
List of Figures	viii
 CHAPTER	
I	INTRODUCTION
	1
	Purpose of the Study
	1
	Rationale and Significance
	1
	Research Questions
	4
	Definition of Terms
	5
	Limitations of the Study
	6
 II	 REVIEW OF RELATED LITERATURE
	8
	Environmental Perspective
	8
	Interactional Perspective
	12
 III	 METHODOLOGY
	17
	Instrumentation
	17
	Session 1
	17
	Session 2
	18
	Session 3
	18
	Item Generation for the Instruments
	19
	Pilot Study
	21

CHAPTER		
	Sample and Sampling Procedures	23
	Statement of Procedures	24
	Design	26
	Factor Analysis	27
IV	PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS	28
V	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	55
	Introduction	55
	Summary of Results and Implications	56
	Recommendations	61
	References	65
	Appendices	
	Appendix A - Initial Item Pool	70
	Appendix B - Student Scales I, II, III, IV	76
	Appendix C - Sources Used in the Development of the Four Scales	85
	Appendix D - Letter to the Superintendent	90
	Appendix E - Letter to the Ethics Committee	92
	Appendix F - Parent Permission Form	97

List of Tables

Table		Page
1	Matrix of External and Internal Factors (Stress)	18
2	Reliability Coefficients of the Four Scales	22
3	Number of Students by Grade and Sex for Each Participating School	25
4	Computed Eigenvalues for Five Factors (Student Scale I)	32
5	Item Contribution by Factor Score (Time Management) to Level of Stress (Student Scale I)	33
6	Item Contribution by Factor Score (Intrapersonal) to Level of Stress (Student Scale I)	34
7	Ten Highest Ranked Stressors With Item Means and Factor Scores (Student Scale I)	37
8	Coping Strategies Most Frequently Reported (Student Scale II)	42
9	Activities Most Frequently Reported (Student Scale III)	46
10	Level of Interest in Activities (Student Scale IV)	49

List of Figures

Figure		Page
1	Frequency Distribution of Stress Scores for Entire Sample (Student Scale I)	30
2	Frequency Distribution of Coping Scores for Entire Sample (Student Scale II)	41
3	Frequency Distribution of Participation in Activities Scores for Entire Sample (Student Scale III)	45
4	Frequency Distribution of Interest in Activities Scores for Entire Sample (Student Scale IV)	48

CHAPTER I

Introduction

Purpose of the Study

The overall purpose of this study was to examine the levels and types of stressors of junior high school students in selected rural Newfoundland settings. As well, the following stress-related factors were investigated: coping strategies, degree of participation in activities, and interest levels in the specified activities.

The specific purposes of this study were: (a) to identify the major stressors of rural students in grades seven, eight and nine; (b) to assess the overall stress level (high, medium or low) for those students; (c) to determine how selected biographical data are related to the type and the degree of stress for these students; (d) to describe the coping strategies identified by the students; (e) to describe the level of participation in selected activities, as well as the level of interest reported in these activities by students; (f) to ascertain to what extent males and females differ in the type and degree of reported level of interest in these activities; and (g) to make recommendations for future research and action.

Rationale and Significance

In recent years, the phenomenon of stress has received

increased attention in research literature. In the past, the research emphasis has been on stress as experienced by adults; however, as the research continued, it became apparent that knowledge of stress and its effects on young people, especially children and adolescents, was also a crucial social issue.

The identification of stress and the nature in the manifestation in children is of particular importance in the educational setting. It is critical not only in the area of identification but also in the light of interventions that school personnel can undertake to ameliorate the problem. Forman and O'Malley (1984) acknowledged that stress associated with school may account for a large portion of the total stress experienced in the life of a student.

... current knowledge of causes, effects, and management of school stress ... will facilitate informed decision-making which balances the need to provide a solution to the problem of school stress and the need to attain other goals of the school such as increasing student achievement. (p. 163)

Dickey and Henderson (1989) further acknowledged the need to identify school life events that are perceived by children to be stressful. Knowledge of children's stress and coping abilities would assist the school to set up training programs for educators to identify children at risk and facilitate

appropriate coping responses. They stated: "Such a program can then extend into presentation and practice of positive techniques which children can learn and use for a healthier emotional and physical life" (p. 17).

D'Aurora and Fimian (1988) stated that "... if the student deals with stressful incidents for a prolonged period of time, he/she could experience burnout, a psychological condition manifested by any number of emotional or physical problems" (p. 44). One promising area of identifying children at risk is through focusing on behavior problems that may develop as a result of poor coping strategies; however, Cullinan, Epstein and Kauffman (1984) stated that "surprisingly little research has been done regarding the prevalence of specific behavior problems ..., especially children's behavior in school as perceived by teachers" (p. 10).

Price (1985) emphasized the importance of stress on the subsequent health of adolescents. He stressed the importance of further research into the development of a sensitive, reliable and valid instrument for measuring stress levels in adolescents.

In a study carried out by Fimian and Cross (1986) on stress and burnout among adolescent students, it was acknowledged that "to date, the stress research involving students and using stress and burnout assessment instruments has been very specific in scope and limited in extent" (p. 248).

It is the intent of this study to broaden this scope by

using an assessment measure which covers a wide diversity of childhood stressors. Research was typically focused on attributing stress to specific factors; it is being acknowledged that it "is an amazingly complex interplay of a number of variables, many of which are only now becoming understood" (Fimian & Cross, 1986, p. 248). This study set out to identify the types of demands adolescents face and how well they feel they cope with these demands. The research measure used is based on the premise that coping resources and stress levels are reciprocally related. Gender differences in stress levels and coping adequacy are predicted.

Research Questions

1. What is the overall mean of the stress levels for the entire sample on Student Scale I? (see page 6 for explanation of Scale I)
2. What is the mean score for the following five categories on Student Scale I: Time Management; Intrapersonal; Locus of Control; Interpersonal; and Academic Expectations?
3. What are the top 10 stressors for the entire sample on Student Scale I?
4. What is the overall mean for the coping strategies on Student Scale II? (see page 6 for explanation of Scale II)
5. What is the mean for the participation in activities on Student Scale III? (see page 6 for explanation of Scale

III)

6. What is the mean for the level of interest in the activities on Student Scale IV? (see page 6 for explanation of Scale IV)

7. Are there any gender differences with regard to stress levels and coping levels as reported on Student Scale I and Student Scale II?

8. Are there any gender differences with regard to participation in activities and interest in the activities as reported on Student Scale III and IV?

9. Are there any gender differences in the five categories of stress for Student Scale I?

10. Do students at the different grade levels report significantly different levels of stress?

11. Do students at the different grade levels report significantly different coping strategies?

Definition of Terms

Stressor - Situations or events in life which are perceived to cause a degree of strain on the individual's resources to cope. There is a relationship between one's perception of the demand and one's perception of the ability to respond.

Stress - Stress is defined by Hiebert (1988) as "an integrated, multidimensional response, involving at least the physiological, cognitive, and behavioral systems, occurring

when people perceive the demands of a situation to exceed their coping resources" (p. 226). This definition will be viewed in the context of that given by Moore (1975) in which he describes stress in young people in terms of "three different forms: (a) ordinary tension resulting from day-to-day stress; (b) developmental stress that occurs at times of life-change; and (c) crisis-related life stress caused by events beyond the child's or youth's control" (p. 249). It will include, then, a diverse collection of events, as well as the child's perceptions of those events.

Student Scale I (40 Items) - Manifestations and causes of stress incorporating the intrapersonal, interpersonal, time management, locus of control and academic expectations categories (see Appendix B).

Student Scale II (23 Items) - Negative and positive means used to cope with stressful demands (see Appendix B).

Student Scale III (18 Items) - Participation in activities (see Appendix B).

Student Scale IV (18 Items) - Level of interest in activities (see Appendix B).

Rural - Communities in Newfoundland with a population of 4,500 or less.

Limitations of the Study

1. The study used junior high students for its subjects; the results, therefore, cannot be generalized to other

groups.

2. The data for this study were collected in one geographical area of the province, which limits the generalization of findings to other areas.

3. The findings reported in the present study were based only on a sample from four selected schools in one geographical area of the province.

4. The researcher investigated stress as it occurred at one point in time. The findings may not be generalizable to different points in time. If respondents completed the scale while more highly stressed than usual (before a class examination, for example), the responses may be significantly different than if they were administered the scale in a relatively low stress situation.

5. A small percentage of the potential sample selected failed to participate. There is no measure of the stress levels of the non-participants; thus, it cannot be determined if there were any factors or characteristics differentiating those who agreed to participate and those who did not.

6. The pilot study was carried out with grade 5 students, a slightly younger group than was selected for this study.

CHAPTER II

Review of Related Literature

There has been a proliferation of research literature pertaining to stress and stress management over the past five years (Hiebert, 1988). Most of the earlier studies concentrated on stress in adults; however, in the last few years there has been an increasing trend towards investigating stress in children.

Environmental Perspective

The most frequently used method of assessing stress level involved developing a measure based on the number of stressful life events that a person had experienced within a recent time period. Predicted stressful life events (SLE's) were rated by doctors, teachers and mental health workers. They were then compiled by researchers in the child development field into an inventory which was usually completed by a child's parent(s).

Chandler, Million and Shermis (1985) studied the relationship between the variables of age and socio-economic status and potentially stressful life events reported by children. They reported significant differences ($p < .001$) between the number of events reported by older children in comparison to those reported by younger children, with broader experiences being a major contributor to the higher number of

SLE's reported by the older subjects. The results also indicated that children from low income families reported a significantly greater number of SLE's than children from higher income families.

Healy and Parish (1986) investigated the effects of gender and intellectual differences on stress reaction. Their study of parents' perceptions of stress levels in their children compared stressors and the symptoms exhibited. Results showed that nongifted females were more likely to be stressed than males and their gifted peers. The main stressors were nonacceptance by others and expectations of perfection. The authors felt that this suggests males and gifted females were more likely to operate from an internal locus of control and be more self-reliant and autonomous. The study also suggested that assessing the level of stress involves taking into account a number of factors; it is a much more complex process than was originally believed.

Tolan (1986) based his study on a four dimensional model of social stress. He found results similar to Healy and Parish (1986), indicating that females found daily hassles more stressful than males; moreover, day-to-day hassles correlated with self-image of males and females. Tolán concluded that "daily hassles maybe distinctly useful compared to other types of social stress in distinguishing adolescents likely to be experiencing significant emotional problems" (p. 12).

In a criticism of earlier attempts to measure stress, Miller, Wilcox and Soper (1985) concluded that the use of major life events to derive a score expressed in life change units is an insufficient measurement of stress. They advocated that "daily hassles" must be taken into account because of the impact they have on the psychological and physical health of students. In their study which involved 38 high school students, a daily hassles measurement scale was constructed by taking into account the students' personal perceptions of what constituted daily hassles for them.

In an attempt to explain the effects of stress on children's behavior, Johns and Johns (1983) outlined a stress cycle. A child will feel a sense of threat in a situation and a physiological response is activated. The first inclination of a child is to reduce the stress by responding in nonconstructive ways to the situation; an attempt to gain control may result in such behaviors as "bullying or disturbing other children or by responding to adults in a disrespectful manner" (p. 48). These types of behaviors solicit disapproval and punishment from adults, with a consequent increase in the child's stress level.

The shift in emphasis toward delineating the effects of stress on behavior led to increased attention in recent years on coping responses. In a study involving 974 primary children, Sterling, Cowen, Weissberg, Lotyczewski and Boiko (1985) compared the experiences of stressful life events to

the existence of problem classroom behaviors using a teacher rating scale. They found that children who experienced multiple recent stressful events were judged to be more maladjusted and less competent than those who had experienced fewer such events. Their findings provided support for their hypothesis (developed from a review of the literature of SLE's) that child psychological adjustment is strongly associated with the degree of psychological vulnerability and quality of stressful events. They concluded that the presence of SLE's in early childhood is likely to accelerate maladaptive behaviors, resulting in a detrimental cumulative effect. They claimed that earlier research had "focused on adjustment problems that follow stressful life events and had not sufficiently considered the effects of such events on competence behaviors" (p. 89).

In a study of stress and burnout among preadolescent and early adolescent gifted students, Fimian and Cross (1986) concluded that the quality of school life experienced by gifted students depends to a large degree on personal characteristics and perceptions of experiences. Students who possessed low self-esteem, boredom with school tasks, and high levels of anxiety were likely to experience a greater degree of stress than those who did not exhibit these characteristics.

D'Aurora and Fimian (1988) acknowledged that various factors play a role in predicting the level of stress a child

experiences. The stress level is influenced by such factors as the frequency and intensity of the stressor, the context in which the stressor occurred and the personal characteristics of the child. These factors interact in various ways; prediction of stress levels, then, is a complex undertaking.

Interactional Perspective

Much of the earlier research on stress was done from an environmental perspective. It was taken for granted that a set level of stress was inherent in particular situations. Measurement of stress was therefore undertaken by using a form of life events scale. Hiebert (1988) pointed out that there is a logical contradiction in this approach, as different people seldom experience similar stress levels when they encounter the same situation; also, an individual may experience different levels of stress in similar situations on different occasions.

Dealing with the issue of stress from an interactional perspective would entail taking into account an individual's coping abilities. As Hiebert (1988) stated, "... it is a person's inability to cope with the situation that is responsible for precipitating the stress" (p. 228). This approach would obviously emphasize people's perceptions, or misperceptions, of situations and their ability to cope; cognitive appraisal, then, plays a central role in the interactive perspective to the study of stress.

The role of individual perception in identifying students at high risk for stress was investigated by Basch and Kersch (1986). Adolescents' self-reports of stressful life events were compared and ranked by age, sex and grade level. The authors suggested that differences between adult and adolescent perceptions of stressful events must be taken into account.

Compas, Davis, Forsythe and Wagner (1987) further acknowledged the need to examine the role that cognitions play in determining whether minor events are stressful. The authors suggested that a variety of psychological and behavioral problems of adolescents are based on cognitive appraisal of minor life events. A reliable measure was developed by the authors based on adolescents' perceptions of significant events; both positive and negative events of a major and minor nature occurring on a daily basis were taken into account. The authors claimed that the inclusion of items that reflect chronic daily stressors in a measure of adolescent stress would be more sensitive to the adolescent's life experiences.

Brotman Band and Weisz (1988), in their study on children's coping behaviors, identified specific coping strategies used by children in various situations. It was concluded that the coping efforts of children varied from situation to situation and was directly influenced by the developmental age of the child.

Another study carried out by Snow, Gilchrist, Schilling,

Schinke, and Kelso (1986) indicated that the child's perceptions of a situation affect his/her coping abilities. The conclusions reached by the authors were that high anxiety levels contribute to depression and low self-esteem impairs accurate judgement of a situation, while moderate levels of anxiety have a motivating influence, enhancing coping abilities.

Calhoun and Beattie (1987) suggested that students with learning difficulties also have deficient social skills. These children lack effective strategies for coping in the school environment. A study on mildly handicapped adolescents delineated and described the following specific school competencies categories: interpersonal relationships, classroom behaviors, and time management.

Yamamoto and Byrnes (1987) studied primary and elementary school children's perception of stressful life events. The researchers concluded that children's ratings of stressful life events did not vary with the child's developmental age level. In a subsequent study by Yamamoto, Soliman, Parsons and Davies (1987), it was found that certain life events are similarly perceived as upsetting by children of various cultures.

A clinical study undertaken by Beidel (1988) on test anxious children concluded that children who display signs of test anxiety are more inclined to experience anxiety in social situations where fear of evaluation from others exist.

An investigation was carried out by Paterno (1987) into children's perceptions of stress and coping. The researchers reported that the most common stressors experienced by primary and elementary school children were managing school work, achieving good grades, and relating well with peers. The authors concluded that children deal with these stressors by depending on others to help them cope.

Elwood (1987) developed a measure of stressful events and coping responses of children in grades four and seven. Inventory items were selected on the basis of children's self-reports. The item content of the measure included life events and daily stressors. Children's perceptions of failure as well as personal control in interpersonal relationships were also included in the measure.

Patterson and McCubbin (1987) conceptualized coping behaviors as having a two-fold effect on stress. Negative coping responses tend to increase the level of stress experienced while positive responses lower stress levels by reducing the demands on the individual; positive coping responses can alter the meaning of the stress-provoking situation or help in managing the tension that results from the experience. The authors concluded that the particular coping style adopted depends on the interplay of the individual's resources and the social context in which the stressor is experienced.

A study by Wertlieb, Weigel and Feldstein (1987) explored the degree to which the level of stress experienced by the

family, as well as the child's stressful life events and family social support systems, impacts on the behavior of the child. The researchers concluded that undesirable life events are strongly associated with maladaptive behaviors; problem behaviors generally occur when levels of stress experienced by the parent(s) were high.

Literature dealing with the stressful experiences of children living in military communities was reviewed by Shaw (1987). He concluded that these children experience temporary upsetting situations which require adaptive capacities. Community cohesiveness has a positive psychological effect, which assists the child's efforts at coping.

Thus, a popular method of evaluating stress levels has been to assess the number of stressful life events and/or daily hassles that individuals have experienced. However, this environmental perspective has been criticized as being too limited since essentially it tends to ignore a more interactional perspective and fails to take into account individuals' perceptions, or misperceptions, of situations or their ability to cope. The present study incorporated a more interactional perspective giving greater insight into the complex nature of stress, especially in terms of the experiences of adolescents.

CHAPTER III

Methodology

Instrumentation

Construction of the scale began with three preliminary sessions held with a research team comprised of: Glenys Wellman and Carolyn Mate, graduate students in Educational Psychology; Dr. Leroy Klas, Professor, Department of Educational Psychology; Dr. Arthur Sullivan, Professor, Department of Psychology; Mr. Tony Simmonds, Associate Professor, Department of Psychology; Mr. David Brazil, Director, Youth Advisory Council; and Ms. Gail O'Keefe, Coordinator of the Rainbows Program.

Session 1.

A critical analysis of the content of the Wilson Stress Profile for Students (Wilson, 1980) was carried out by the team in order to delineate categories or items to be formulated for a new stress scale. Categories to be included in the scale were discussed in terms of a matrix of external and internal factors. The external factors were: home and family; school; and community. The internal factors were: interpersonal; time management; health-related (physical and emotional); locus of control; coping strategies; and attitudinal (self, others and situations); (see Table 1).

Table 1

Matrix of External and Internal Factors (Stress)

Internal Factors	<u>External Factors</u>		
	School	Family/Home	Community
Interpersonal	1	2	3
Time Management	4	5	6
Health-Related	7	8	9
Locus of Control	10	11	12
Coping Strategies	13	14	15
Attitudinal (self, others, situational)	16	17	18

Session 2.

During this session, in order to generate ideas, the team reviewed the content and format of an assertiveness scale and self-concept scale developed by Mr. Tony Simmonds and Dr. Arthur Sullivan. After this analysis, it was the consensus of the team that a new scale was needed to meet the requirements of this study.

Session 3.

The team discussed the following aspects of the planned scale: whether to use a time usage category; the number of

items to be initially developed; and the descriptors to be used. Items were to be generated and developed through a detailed review of the literature. An analysis of the selected items and a restatement of those items into a Likert Scale format would follow.

Item generation for the instruments.

The generation of items began when Glenys Wellman, Carolyn Mate and Dr. Leroy Klas (the primary researchers) compiled lists on an individual basis. These items were later combined to form a 138-sample item pool for further evaluation by the members of the research team. They were selected from readings in the following areas: child and adolescent development; stress variables; coping mechanisms of children and adolescents; and stress management (see Appendix A). The items were then judged on the basis of their appropriateness in relation to the material referred to in Table 1. There were 18 units to consider in this analysis.

The three primary researchers agreed that the number of items should be reduced to ensure maximum time efficiency in administration. The developmental level of the subjects would be taken into account. The reduced number of items would be more suited to the expected attention span of the students and would facilitate comprehension.

The entire research team acted as judges to evaluate the placement and categorization of the 138 items, to delete

unsuitable ones and to reword particular items for clarification. The primary researchers evaluated the judges' responses and subsequently reduced the number of items further for a second draft of the instrument. After the evaluation of the initial item pool by the team, it was apparent that many items could be classified under more than one category. The primary researchers then reorganized the scale into the following categories for the second draft:

1. **Student Scale I** - (a) Intrapersonal (health, attitudes toward self); (b) Interpersonal (attitude towards others, interaction with others); (c) Time Management (use and organization of time); and (d) Locus of Control.

2. **Student Scale II** - Coping Strategies.

3. **Student Scale III** - Participation in Activities (hours on average per week spent on activities) - A comprehensive list of activities for this category was developed by Dr. Leroy Klas. Other members of the research team were asked to add other activities to this list and to refine those already listed.

4. **Student Scale IV** - Level of Interest in Activities.

The reduced item pool with the reorganized categories was then presented to the judges for evaluation, and approval was given for the second draft of the instrument. The instrument consisted of the following four scales:

1. **Student Scale I** - Manifestations and causes of stress, incorporating the intrapersonal, interpersonal, time

management and locus of control categories (40 items) (see Appendix B).

2. **Student Scale II** - Coping (23 items) (see Appendix B).

3. **Student Scale III** - Participation in Activities (18 items) (see Appendix B).

4. **Student Scale IV** - Level of Interest in Activities (18 items) (see Appendix B).

See Appendix C for a list of sources used in development of the instrument.

Pilot study.

Student Scales I and II were administered to a class of 26 grade five students at an urban school. Information was gathered to assess the effectiveness of the administration procedures. The following observations were made:

1. Students' comprehension of the Likert Scale would be improved if examples for clarification of the terms "seldom" and "often" were provided.

2. The scales took approximately 35 minutes to complete.

3. A coding system was implemented and appeared to be effective.

4. Items that needed clarification to improve students' understanding were noted and adjustments were made.

The data obtained from this pilot study were used to

assess the content validity, construct validity and reliability of Student Scale I and Student Scale II through item analysis using the SPSS-X computer program. Three sets of statistics were computed: the percentage of respondents making a specific response on the Likert Scale for each item; the mean and standard deviation of each item; and an item discrimination index. Information was obtained about item response distribution, spread and skewness. The item discrimination index demonstrated the extent to which each item discriminated among the respondents in the same manner as the total score. Items that did not appear to discriminate well were eliminated, resulting in a more homogeneous scale. In assessing reliability, alpha coefficients were computed. Table 2 gives the alpha coefficients computed for each scale.

Table 2

Reliability Coefficients of the Four Scales

Scale	Alpha Coefficient
Student Scale I (Stress)	.83
Student Scale II (Coping)	.69
Student Scale III (Participation in Activities)	.61
Student Scale IV (Level of Interest in Activities)	.69

The primary researchers decided to use a Likert Scale for the participation in activities section of the instrument; children in the pilot study found it difficult to conceptualize their activities in terms of hours spent per week. It was believed that the Likert format would strengthen the internal reliability of the instrument.

Garton and Pratt (1987) studied the relationship between levels of participation and levels of interest in leisure activities of adolescents. Respondents were asked to rate their responses using a Likert Scale format. This method generated high alpha values, indicating that the instrument was a reliable measure and that the Likert format was effective.

Omizo, Omizo and Suzuki (1988) used a Stress Scale to measure children's stress levels. This instrument was reported to have reliability coefficients in the .70s and .80s. Fimian and Cross (1986) used a Student Stress Inventory, a 1 to 5 point Likert-type scale, to measure the stress levels of gifted students. This scale was one of a variety of subscales with alpha reliability estimates ranging from .69 to .80.

Sample and Sampling Procedures

The sample consisted of grade seven, eight and nine students in four schools in the Green Bay Integrated School Board. The total number of students in the sample was 212:

94 males and 118 females. The age levels of the students were as follows: grade seven, age 12; grade eight, age 13; and grade nine, age 14. Table 3 provides the number of students at each grade level for the sample.

Statement of procedures.

This study was conducted in the Province of Newfoundland in the Green Bay Integrated School District with grade seven, eight and nine students. One of the first steps in conducting this research was to request the co-operation and support of the Green Bay Integrated School Board. A letter was sent to the Superintendent of the Board informing him of the nature and purpose of the research project (see Appendix D).

A letter was sent to the Chairman of the Faculty of Education Ethics Committee to obtain approval to conduct the research (see Appendix E). This letter outlined the steps to be undertaken to ensure that appropriate ethical procedures were followed while carrying out the study. The Ethics Review Committee of the Faculty of Education granted permission to conduct the research. Procedures and protocol as described in the research proposal conformed adequately to the university's guidelines for research involving human subjects (see Appendix E).

Participation in this research by students was voluntary. Parent cooperation was obtained through a parent permission letter. This letter informed parents of the purpose of the

Table 3

Number of Students by Grade and Sex for Each Participating School

Grade	Sex	School			
		1	2	3	4
7	M	12	6	6	6
	F	16	7	6	13
8	M	19	2	3	8
	F	22	4	5	15
9	M	9	7	10	6
	F	6	10	11	3
School Totals		84	36	41	51

study and the nature of the procedures to be followed (see Appendix F). Each subject was also informed that his/her right to privacy was protected, the data being accessible only to the researcher involved in conducting the study. Students were also informed that they could discontinue involvement in the study at any point.

Administration of the instrument was conducted by the

researcher and guidance personnel in the Green Bay Integrated School District on May 8, 1989. Students in grades seven, eight and nine were selected from four schools. An identification number was assigned to each school. An additional number was paired with this number to further identify each student for research purposes. Seating plans for each class had been provided to facilitate the coding procedure.

Every attempt was made to standardize the administration of the instrument. Administrators of the instrument were directed to read to students the directions at the top of each scale. They were also directed to provide examples and explanations where necessary. The completed instruments were collected and passed on to the researcher.

Design

Although this study was primarily descriptive in nature, it also investigated correlational relationships between a number of variables. The subjects of the study were grade seven, eight and nine students. They were administered a self-report instrument that has four scales. Scale I consisted of items which assess the individual respondents' perceptions of stressors in their lives in the following areas:

1. Intrapersonal - dealing with health-related factors and attitudes toward self and others.
2. Interpersonal - dealing with interaction with peers,

family and teachers.

3. Time management.

4. Locus of control.

Scale II consisted of coping behaviors, Scale III assessed level of participation in activities, and Scale IV determined the degree of interest in those activities.

Factor Analysis

The statistical package SPSS-X was used for factor analysis of the data obtained from the administration of the instrument. Factors having eigenvalues of 1.00 or more were extracted using the Varimax rotation procedure. Five factors were extracted to form a correlation matrix and then rotated to reveal how well the scale items defined stress. Items which did not meet the criterion for internal consistency were identified and discarded, leaving only those items which helped to define each factor.

CHAPTER IV
Presentation, Analysis and Interpretation
of Results

The purposes of this study were to investigate the perceived levels of stress and stressors of junior high school students in selected rural Newfoundland settings as well as their related coping abilities. Participation in activities and interest in activities were also included as areas to be investigated.

This chapter is a presentation of the analysis of the data collected as it pertains to each of the research questions. Descriptive and inferential statistics are used to present the findings. Graphs and tables are presented as pictorial representations of the data. The statistical package for Social Scientific Research (SPSS-X) was used to analyze the data.

Research Question #1: What is the overall mean of the stress levels for the entire sample on Student Scale I?

The mean total stress score for the entire sample as measured by the raw scores of Student Scale I was $M = 100.023$, with a standard deviation of 16.039. The scores ranged from a low score of 63 to a high score of 149 with a potential raw score range from 40 to 200. The frequency distribution with the number of occurrences of scores in each five-point

interval is found in Figure 1. The spread of scores represents a normal distribution which testifies to the reliability of the instrument used.

Student Scale I, with a Likert Scale response range from 1 to 5, provided the participants with five possible choices for responding to each of the 40 items. The five choices were: 1 = not like me; 2 = seldom like me; 3 = sometimes like me; 4 = often like me; 5 = always like me. The overall item mean (2.5016) for the 212 respondents fell just below the "sometimes like me" point on the 5-point response scale. This indicates that, on average, respondents identified the items on this scale to be somewhat stressful for them.

Omizo et al. (1988) used a Stress Scale to measure the stress levels of children in the elementary, intermediate and high school grades. The scale ranged from 0 to 100 in intervals of 10, with zero indicating no stress and 100 indicating the highest level of stress. The researchers identified 20 participants at each of the elementary, intermediate and high school levels who were high scorers.

Fimian and Cross (1986) used a Student Stress Inventory, with a 1 to 5 point Likert-type scale, to measure the stress levels of gifted students. This instrument measured the degree of perceived impact that each of 60 school-related items had upon the student's stress level. The reported mean score of the Student Stress Inventory fell in the low moderate to moderate range of level of stress.

Number of Respondents	Midpoint of Raw Score Range (5 point intervals)
0	56
1	61
0	66
4	71
12	76
15	81
21	86
25	91
26	96
26	101
23	106
18	111
13	116
9	121
7	126
7	131
2	136
3	141
0	146
1	151
0	156
Mean	100.023
Standard Deviation	16.039

Figure 1 Frequency Distribution of Stress Scores for Entire Sample (Student Scale I)

Research Question #2: What is the mean score for the following five categories on Student Scale I: Time Management; Intrapersonal; Locus of Control; Interpersonal; and Academic Expectations?

A factor analysis was carried out to devise a homogeneous stress scale (Student Scale I) with a reasonable degree of internal consistency. Five factors were extracted and were given the following labels: Time Management; Intrapersonal; Locus of Control; Interpersonal; and Academic Expectations. The selection was based on the computer eigenvalue of each factor, which is the total variance explained by each one. Table 4 shows the eigenvalues, the percentage of the total variance attributable to each factor, and the cumulative percentage of variance. The remaining items which did not contribute as significantly to each factor accounted for the remaining 62.2%.

These factors were similar to the original categories devised through the initial item generation procedures with the exception of factor V, Academic Expectations, which was an additional factor extracted through the confirmatory factor analysis. The five factors are further defined as follows:

1. **Time Management:** Negative and positive aspects of time usage and organization.
2. **Intrapersonal:** Health-related factors and attitudes toward self and others.
3. **Locus of Control:** Perceptions of behavior as caused

Table 4

Computer Eigenvalues for Five Factors (Student Scale I)

Factor	Eigenvalue	Pct of Var	Cum Pct
1 Time Management	6.76993	16.9	16.9
2 Intrapersonal	2.54974	6.4	23.3
3 Locus of Control	2.27864	5.7	29.0
4 Interpersonal	1.91934	4.8	33.8
5 Academic Expectations	1.58750	4.0	37.3

by external or internal events.

4. **Interpersonal:** Interactions with peers, family and teachers.

5. **Academic Expectations:** Concerns about school and future education.

The first two categories, Time Management and Intrapersonal, contributed the most to levels of reported stress. The items included in the Time Management and Intrapersonal categories and the factor score for each can be found in Table 5 and 6.

Table 5

Item Contribution by Factor Score (Time Management) to Level
of Stress (Student Scale I)

Factor I - Time Management	
Item	Factor Score
<hr/>	
3. I have trouble getting all my homework done.	.68494
15. I need help scheduling my time.	.57674
23. I think my social life interferes with my studies.	.54084
39. I get behind in my work.	.50811
9. I cannot concentrate on my studies.	.47681
21. I feel sick when I think about my studies.	.44408
7. I don't have enough time to get everything done.	.40575
25. I feel that most people are doing better in school than I am.	.37479
36. I worry about not being able to finish my education.	.31148
27. I have too many distractions.	.30542

Table 6

Item Contribution by Factor Score (Intrapersonal) to Level of Stress (Student Scale I)

Factor II - Intrapersonal	
Item	Factor Score
<hr/>	
17. I find my subjects in school are boring.	.64601
14. I do things that get me into trouble.	.58078
31. I waste time at home.	.42610
35. I make good use of my time in school.	.42308
28. I blame others when things don't go right.	.41612
1. I don't care about a lot of things.	.34589
8. I tell other people what to do.	.34570
18. I feel that people expect too much of me.	.36071
33. I worry about the health of my family or friends.	.30150

It appears that adolescents find time scheduling and organization of time as it pertains to school-related activities to be major contributors to level of stress. The school environment demands that students manage their time efficiently in order to meet certain academic expectations. Attempting to meet these demands taxes the students' resources to cope.

D'Aurora and Fimian (1988) viewed level of stress in relation to three types of variables: personal, anxiety, and classroom. They stated: "The different types of variables, as well as the manner, frequency, intensity, and strength with which they occur, are key issues in the examination of student stress and burnout" (p. 46). Fimian and Cross (1986), in a study of 121 gifted students, separated school stress into three categories: (a) student distress; (b) social/academic; and (c) poor instructional relations. Respondents were asked to rate each item on a 1 to 5 point Likert Scale. They found that students scored in the low moderate to moderate range on items that were school-related. High stress levels were negatively and significantly related to positive indicators of school life quality ($r = .48$, $p < .001$).

Calhoun and Beattie (1987) identified the major categories of school competency needs of adolescents with mild learning disabilities. Through the interview method, data were compiled on the skill levels of the students, their attitudes toward school and school difficulties they were experiencing. Responses were organized into categories with an intercoder agreement of .92 reliability. The findings identified study skills and organizational ability to be a deficient skill area for these students. The four stressors in this category were: being prepared for class, note taking, test taking, and completing homework assignments. A second major category was further identified in the area of social

skills. Conflicts with other students and with teachers centered around intrapersonal attitudes toward fairness and personal space.

Miller, Wilcox and Soper (1984), a study of 16 to 18 year-old high school students, identified the 15 most stressful concerns of the students. The students ranked "concerns about the health of a family member" as ninth on the list. This is highly similar to the ranking of the comparable item "I worry about the health of my family and friends" in Table 6.

While little empirical evidence has statistically defined the role of intrapersonal variables in contributing to the level of stress, support for the influence of intrapersonal variables has been gained through observations in the classroom. It has been found that personality traits, motivational factors and emotional states are related to higher levels of stress (Boyle, 1987; Forman & O'Malley, 1984; Hurrelmann, 1984; Omizo et al., 1988).

Research Questions #3: What are the top 10 stressors for the entire sample on Student Scale I?

The most stressful items, as measured by Student Scale I, and their means and factor loadings are listed in rank order, from most to least stress for the total sample, in Table 7.

Table 7

Ten Highest Ranked Stressors With Item Means and Factor Scores
(Student Scale I)

Item	Item Mean	Factor Score
3. I have trouble getting all my homework done.	2.4507	.68494
17. I find my subjects in school are boring.	3.3944	.64601
14. I do things that get me into trouble.	2.4883	.58078
15. I need help scheduling my time.	1.8873	.57674
23. I think my social life inter- feres with my studies.	2.6150	.54084
39. I get behind in my work.	2.3850	.50811
9. I cannot concentrate on my studies.	2.7934	.47681
21. I feel sick when I think about my studies.	2.3709	.44408
31. I waste time at home.	3.0094	.42610
35. I make good use of my time in school.	2.9202	.42308

A review of the table shows that the majority of stressors are school-related. The highest ranking stressor "I have trouble getting all my homework done" is related to the Time Management category which contributed most to levels of reported stress. The additional items in the list of highest stressors which are related to this category were: "I need help scheduling my time"; "I think my social life interferes with my studies"; "I get behind in my work"; "I waste time at home"; and "I make good use of my time in school." The content of the items revealed that personal expectations about school work are a source of high stress for adolescents. The second highest ranking stressor, "I find my subjects in school are boring," as well as "I cannot concentrate on my studies" and "I feel sick when I think about my studies," are related to the Intrapersonal category of stressors which reflects inner attitudes towards self and others. The third highest stressor "I do things that get me into trouble" is included in the Interpersonal category; relationships with other people appear to be of great concern to adolescents.

Dickey and Henderson (1989) researched children's perceptions of stressful life events as well as stressors found in the school environment. Through interviews conducted with 141 primary students, they found that the highest stressors for this sample were concerns about doing well academically and being socially accepted. Omizo et al. (1988)

conducted an exploratory study of stressors and symptoms with a group of 60 adolescents using the Stress Scale. The following school-related stressors were identified: not doing well in school, problems in relationships with teachers, and not seeing school as relevant.

Similar results were found by Fimian and Cross (1986), who conducted research with a sample of 121 gifted adolescents using a series of inventories. Classroom stress was found to be significantly related to student burnout. Low levels of school life quality as perceived by students were also seen as a major source of stress. Basch and Kersch (1986) and Paterno (1987) affirmed that the school environment is often perceived by students as being stressful. The Adolescent Life Change Events Scales (ALCES) were administered by Basch and Kersch to 89 females and 100 males. They found high stressors to be failing subjects or grades, having difficulties with teacher or principal, and quitting school. Paterno identified school work and achievement and peer relationships as the most salient stressors connected with school life for a sample of 207 elementary and junior high students.

The studies cited above used a variety of measurements to assess the perceived stressors of adolescents. In some studies the age levels of the subjects chosen were low and some of the samples were relatively small. Because of these differences, caution should be exercised in generalizing many of the specific findings.

From the data compiled through factor analysis in this study it can be concluded that time management is a major contributor to stress. Although there are articles written on the time pressures placed on children (e.g. Elkind, 1986; Gibbs, 1989), there have been relatively few studies that have isolated time pressures of school to be high stressors for students. Little research has been carried out which points to the difficulties adolescents experience in managing their time effectively.

Research Question #4: What is the overall mean for the coping strategies on Student Scale II?

Student Scale II is one of the other three subscales that help to shed light on other aspects of stress. It deals with coping strategies that students use to deal with stress.

The mean total coping score for the entire sample as measured by Student Scale II was $M = 64.319$ with a standard deviation of 7.948. The scores ranged from a low score of 40 to a high of 90 with a potential raw score range from 23 to 115. Figure 2 shows the frequency distribution with the number of occurrences of scores in each five-point interval. The spread of scores represents a normal distribution which testifies to the reliability of the instrument used.

Number of Respondents	Midpoint of Raw Score Range (5 point intervals)
1	40.5
0	43.0
3	45.5
2	48.0
3	50.5
12	53.0
15	55.5
22	58.0
18	60.5
34	63.0
20	65.5
32	68.0
14	70.5
17	73.0
8	75.5
6	78.0
1	80.5
2	83.0
1	85.5
1	88.0
1	90.5
Mean	64.319
Standard Deviation	7.948
Range of Raw Scores	40.5 - 90.5

Figure 2. Frequency Distribution of Coping Scores for Entire Sample (Student Scale II)

Student Scale II provided the participants with five possible choices for responding to each of the 23 items. The five choices were: 1 = not like me; 2 = seldom like me; 3 = sometimes like me; 4 = often like me; 5 = always like me. The overall item mean (2.6030) for the 212 respondents fell just below the "sometimes like me" point on the five point response scale. This indicates that, on average, respondents reported a relatively low level of positive coping strategies.

The coping strategies used most often by the students and the item means of each can be found in Table 8.

Table 8

Coping Strategies Most Frequently Reported (Student Scale II)

Item	Item Mean
4. I complain when things don't go right.	3.3099
6. I like to be by myself.	3.1596
1. I can talk to others about how I feel.	3.1033
17. I eat a well-balanced diet.	3.0563
19. I am willing to discuss what happens to me with someone.	3.0094

Although items 1, "I can talk to others about how I feel," and 19, "I am willing to discuss what happens to me

with someone," indicate that students are open to sharing their problems with another person, the coping strategies used most frequently were "I complain when things don't go right" and "I like to be by myself." It appears that adolescents are more likely to deal with stress in a negative or less active manner. The fourth item indicates that students are aware of more general ways to deal with stress by taking care of their physical health through a proper diet.

Paterno (1987), as well as Patterson and McCubbin (1987), had similar findings. Adolescents reported engaging in behaviors generally directed at avoiding the stressor, such as ventilating feelings and seeking diversions. Reported with less frequency were coping behaviors such as relying on oneself to solve problems and make decisions, as well as developing close friendships. Allen and Hiebert (1989) studied the coping behaviors of senior high students. They found that keeping in good physical health, seeking out of social support and self-directedness in problem solving were the most frequently reported coping strategies for this group.

Research Question #5: What is the overall mean for the activities on Student Scale III (participation in activities)?

Student scale III was administered to determine the types of activities students were engaged in and the frequency of participation. The mean total participation score for activities for the entire sample as measured by Student Scale

III was $M = 44.325$ with a standard deviation of 6.532. The scores ranged from a low of 27 to a high of 60 with a potential raw score range from 18 to 72. Figure 3 shows the frequency distribution with the number of occurrences of scores in each five point interval.

Student Scale III provided the participants with four possible choices for responding to each of the 18 items. The four choices were: 1 = seldom; 2 = once a month; 3 = once a week; 4 = almost every day. The overall item mean of 2.4707 for the 212 respondents fell between the "once a month" and "once a week" categories.

The activities engaged in most often by students and the item means of each can be found in Table 9.

Although the item means indicate that students spend a great deal of time involved in these activities, a closer look at how they spend their time is quite revealing. All of the top five activities are relatively unstructured events. None is formally organized either by the school or community organizations. Students appear to be spending most of their time in relatively passive pursuits. Playing unorganized sports is the only physically active pastime in the top activities listed. This is likely the result of the lack of formal, structured recreational activities available in a rural community.

Number of Respondents	Midpoint of Raw Score Range (5 point intervals)
0	23
0	25
1	27
0	29
4	31
3	33
8	35
16	37
21	39
18	41
25	43
27	45
17	47
22	49
20	51
16	53
6	55
5	57
3	59
1	61
0	63
Mean	44.319
Standard Deviation	6.495
Range of Raw Scores	27 - 61

Figure 3. Frequency Distribution of Participation in Activities Scores for Entire Sample (Student Scale III)

Table 9

Activities Most Frequently Reported (Student Scale III)

Item	Item Mean
1. Watching television.	3.8656
3. Hanging out with friends (at home or outside).	3.7419
4. Homework.	3.5968
10. Talking on the telephone.	3.4409
9. Playing sports with friends (not organized).	3.0914

While a major coping strategy of adolescents to alleviate stress has been to engage in some activity which diverts their attention away from the stressor, little research has focused on the identification of the activities chosen. Garton and Pratt (1987) maintained that "active participation in satisfying leisure pursuits may be important for psychological growth and development" (p. 341). In their study of 247 adolescents, these researchers asked respondents to rate 77 activities in a four point Likert Scale. Responses on a three point interest scale indicated their interest in these activities. The Participation scale and the Interest scale reported alpha coefficients of .80 to .85 respectively.

Striking similarities exist between the current study's findings and those of Garton and Pratt, who found that the most frequent and preferred activities were largely passive but sociable in nature. They also found that both males and females spend a major portion of their time with friends, listening to music and talking. The activities least participated in by the subjects in Garton and Pratt's study were cultural activities such as reading, playing a musical instrument, or going to a play. Similarly, the findings of the present study indicate that music lessons and organized school and community activities had the lowest levels of participation by adolescents.

Research Question #6: What is the mean for the level of interest on Student Scale IV (interest in activities)?

Student Scale IV was administered to determine the students' level of interest in certain activities. The mean total interest score for activities for the entire sample as measured by the Student Scale IV was $M = 37.388$ with a standard deviation of 4.867. The scores ranged from a low of 23 to a high of 49 with a potential raw score range from 18 to 54. Figure 4 shows the frequency distribution with the number of occurrences of scores in each five point interval.

Number of Respondents	Midpoint of Raw Score Range (5 point intervals)
0	21.0
1	22.5
1	24.0
0	25.5
2	27.0
7	28.5
8	30.0
22	31.5
8	33.0
22	34.5
13	36.0
38	37.5
16	39.0
39	40.5
8	42.0
13	43.5
6	45.0
6	46.5
1	48.0
2	49.5
0	51.0
<hr/>	
Mean	37.352
Standard Deviation	4.850
Range of Raw Scores	22.5 - 49.5

Figure 4. Frequency Distribution of Interest in Activities Scores for Entire Sample (Student Scale 1V)

Student Scale IV provided the participants with three possible choices for responding to each of the 18 items. The three choices were: 1 = no interest; 2 = a little interest; 3 = a lot of interest. The overall item mean 2.0848 for the 212 respondents fell slightly above the "little interest" response category.

The activities listed in which the students showed the highest interest and the item means of each can be found in Table 10.

Table 10

Level of Interest in Activities (Student Scale IV)

Item	Item Mean
4. Hanging out with friends (at home or outside).	2.8387
1. Watching television.	2.6667
10. Playing sports with friends (not organized).	2.6452
15. Work for pay.	2.4677
12. Talking on the telephone.	2.3118

With the exception of the item "work for pay," all of the high interest items are similar to those listed in the

activities in which they are most frequently involved. It is not surprising, since students generally rate school activities as stressful, that doing homework does not rate as a high interest activity. Students did not rate more formal structured activities as those in which they are highly interested. This does not necessarily mean, however, that they would not be interested in them. It is conceivable that many of these structured activities may not be available in rural communities and students may not have been exposed to them on a regular basis.

The Pearson product-moment correlation coefficient was computed for Student Scale III (participation) and Student Scale IV (interest) and was found to be significant ($r = 0.50$, $p < 0.001$). Garton and Pratt (1987) also reported high correlations between participation in activities and interest in activities ($r = 0.68$, $p < 0.001$). Adolescents seemed to be interested in those activities in which they participated; however, they concluded that it is not clear whether this interest develops as a result of the opportunity to participate.

Research Question #7: Are there any gender and grade differences with regard to stress levels and coping strategies as reported on Student Scale I and Student Scale II?

The MANOVA procedure was used to determine if there were significant differences between males and females as well as

different grade levels in levels of stress and coping strategies. No significant differences for grade level were found in either of the dependent variables, stress level and coping strategies. There were no significant differences between males and females in coping strategies; there were gender differences, however, in levels of stress (Student Scale I). For levels of stress, there was a significant sex effect, $F(1,209) = 5.8957$, $p < .016$. Males had a higher reported level of stress than females (M for males = 106.2188; M for females = 100.1304). When each of the five categories of Student Scale I was investigated, a significant difference was found between males and females in the Intrapersonal category only, $F(1,176) = 14.752$, $p < .0002$. Males appeared to experience more stress than females on this type of stressor (M for males = 0.3064; M for females = 0.2630).

In previous studies researchers have reported conflicting findings. Basch and Kersch (1986) compared males and females on their perceptions of stressors. Their findings suggested that females in general tended to rate stressors as more upsetting than males (M for females = 3.42; M for males = 3.02). Tolan (1986) also compared the ratings of males and females on various types of social stressors. Females were reported to rate "daily hassles" as more stressful than males (M for females = 3.42; M for males = 3.12, $p < .05$). Allen and Hiebert (1989) similarly found that females reported more stress symptoms and more intense demands than males. Novy and

Donohue (1985), however, did find that males experienced more stressful events than females. Fimian and Cross's (1986) findings were inconsistent with those cited above; they concluded that gender was not related to stress.

Paterno (1987) did find gender differences in adolescent coping behaviors. Females reported higher mean coping scores than males ($p < 0.005$). Females appeared to focus more than males on developing relationships with family and friends as a way to deal with problems. The ventilation of feelings by blaming others was reported with equal frequency by males and females.

Allen and Heibert (1989) found that females' coping abilities were higher than males in the areas of self-disclosure and financial freedom, while males scored higher in self-confidence, self-directedness and physical fitness.

Research Question #8: Are there any gender and grade differences with regard to participation in activities and interest in the activities as reported on Student Scale III and IV?

The ANOVA procedure was used to determine if there were significant differences between males and females as well as different grade levels in participation in activities and level of interest in those activities. There were no significant differences found on the dependent variables for grade level. For participation in activities (Student Scale III)

there was a significant sex effort, $F(1,209) = 6.1911$, $p < .0136$. Females had a higher level of participation in activities than males, (M for females = 45.3217; M for males = 43.1042). For interest in activities (Student Scale IV), there was also a significant sex effect, $F(1,209) = 29.1484$, $p < .001$). Females had a higher interest in activities than males (M for females = 38.9304; M for males = 35.5208).

Garton and Pratt (1987) found significant gender differences on the participation in activities as well as on interest in activities, but only in specific areas. Girls reported a higher interest in fashion and light entertainment and engaged in these activities more frequently than boys. Males showed more interest in sports activities and participated in them more frequently than girls.

The results of this study suggest that students may need help in dealing with stress. Problems with time management and intrapersonal concerns appear to contribute most to their levels of stress. Males reported higher stress levels than females, with a significant difference in the intrapersonal category.

The majority of the ten highest ranked stressors were school-related; this finding suggests that a major responsibility for treatment of young people's difficulties with stress may lie with the school system.

The students had a relatively low level of positive coping strategies. Females had a higher level of participa-

tion and interest in activities than males. Most of the activities with high participation levels were relatively unstructured, passive pursuits, but students reported that they had high interest in the activities.

The results pertaining to research questions 9, 10 and 11 (page 5) have been integrated into the discussion concerning research question 8.

CHAPTER V

Summary, Conclusions, and Recommendations

Introduction

The purpose of this study was to determine the levels and types of stress experienced by junior high school students in rural Newfoundland schools. The study also determined the levels of coping ability of these students to deal with stressors. Identification of stressors provides information on what adolescents perceive as being stressful; identification of coping strategies reveals how they deal with these stressors. Students reported on participation in specific activities and their interest in these activities. Data such as grade and gender differences were included in the analyses to determine what, if any, effect these variables may have had on the dependent variables of stress and coping as well as on participation in activities and interest in activities.

The significance of the study relates to the identification of stressors in the school, family and community setting and the interventions that may be put in place to help adolescents increase their resources to meet these demands. Adolescents often lack the skills necessary for effective coping.

The developmental period of adolescence presents problems in adjustment for some youth. Establishing relationships with others, developing realistic attitudes toward self, managing

time efficiently and striving for a sense of control over one's life are sources of stress which may present difficulties for young people. These types of stressors are prevalent in the school environment; however, there are individual differences in how students manage to cope with them.

The data were collected by using an instrument consisting of four scales. Student Scales I and II identified the level of stress and coping as perceived by each participant. Student Scale III and IV measured the level of participation in activities and interest in activities. The sample was taken from a rural Newfoundland school district. Students in grades seven, eight, and nine in four schools took part in the study. The instrument was distributed and collected with the cooperation of the guidance counsellors of the Green Bay Integrated School Board. The sample consisted of 212 students; 118 females and 94 males. Data collection took place in June of 1989. The data were analyzed using the SPSS-X statistical package.

Summary of Results and Implications

The potential raw score range was 40 to 200. The reported range was 63 to 149, with a mean raw score of 100.023. This suggests that students may need help in dealing with stress. The items on Student Scale I were divided by means of a factor analysis into five categories: Time Management; Intrapersonal; Locus of Control; Inter-

personal; and Academic Expectations. An analysis of the results showed that difficulty with time management, especially as it relates to school-related activities, was a major contributor to stress levels. Factors related to health and attitudes toward self and others (Intrapersonal category) served as the second highest contributor to levels of stress.

The emphasis of any helping strategy should probably be on time management, especially in regard to scheduling school-related work. Results showed that students have particular difficulties in organizing time in this area. The results in the Intrapersonal category point to the need to aid students in developing more positive attitudes; encouraging them to accept responsibility for their own actions would appear to be an area that should be emphasized.

The 10 highest ranked stressors were mostly school-related. Adolescents spend a very large part of their waking hours in the school setting; therefore, it is not surprising that school-related stress would constitute a large portion of the total stress experienced in their lives. Schools have a responsibility to meet various needs of their students. If the expectations inherent in the educational system are creating excessive stress in students, the system has an obligation to help them deal with the problem. It can be argued, however, that the school climate should also be examined and modifications to the environment be made to enhance emotional well-being. An attempt is needed to create

a more balanced school environment, one that does not place importance on academic achievement at the expense of social and emotional adjustment.

The students in this study indicated a relatively low level of positive coping strategies; they are likely to deal with stress in a negative or relatively passive manner. This suggests that they tend to have a limited repertoire of effective coping strategies. There appears to be an imbalance between the demands they face and their ability to manage them. One of the ways that schools can help them cope with their environment is to help them develop more positive strategies to deal with problems. Helping them create more active methods of managing stress would possibly result in their feeling a sense of greater control over the events in their lives. The goal should be to assist adolescents in adapting appropriately to situations that produce high stress levels.

A major coping strategy of adolescents to alleviate stress has been to engage in some activity which diverts their attention away from the stressor. The level of participation in activities outside the regular school schedule shows the manner in which they structure their social worlds to meet their individual needs. The most popular activities that these students engaged in were, with the exception of playing unorganized sports, not physically demanding. Aside from doing homework, which is a chore imposed on students by the

demands of the school, the activities they were more often involved in would not be categorized as mentally demanding. They appeared to be spending most of their time in relatively passive pursuits. There was an obvious lack of participation in more formal, structure activities organized by the school or community.

The high level of participation of students in unorganized sports shows that they are interested in physical activity. It was surprising, then, that more of them do not participate in organized sports, either at a school or community level. This may be because school sports tend to be competitive and are restricted to those participants who show a high level of ability. In other words, organized sports may not be available to those students who fail to "make the team." Schools can help meet the needs of students who have an interest in sports but do not have high ability. One way would be to offer a broader program of extracurricular physical activities of a less competitive nature which would include more students.

The five most popular activities do not include school-organized events. This may be due to either a lack of interest in those extracurricular programs which are offered or by a failure of schools to offer a broad range of activities. There are many students who may not be interested in sports, for example, but would be eager to take part in less physically-oriented programs. Programs that were developed

to meet the interests of more students would likely have a relatively high participation rate.

Students generally showed a high interest in those activities in which they participate. Since school-related pursuits are more likely to be rated as stressful by most students, it is not surprising that doing homework does not rate at the high interest level. The high level of interest in passive, unstructured activities may not be due to a rejection of more active, structured pursuits. This may be the result of not having the opportunity to participate and develop an interest in a wider range of activities. The number of structured leisure pursuits available in a rural community tends to be rather limited; young people are not usually in a position to develop a broad range of interests.

In many small communities the school is the only institution that is in a position to offer adolescents a wider range of exposure to different experiences. If school personnel take a more active approach to organizing programs that provide more depth and breadth to the leisure pursuits of adolescents, a healthier school climate would likely result. The increased enjoyment of leisure time might help students to relieve the stressors that they must deal with.

There were no significant differences between the grade levels on stress level or coping strategies. Neither were there significant differences between males and females on coping strategies. There was a significant sex effect,

however, in level of stress. Males had a higher reported level of stress than females. When each of the five categories of Student Scale I was investigated, a significant difference was found between males and females in the Intrapersonal category only. It appeared that factors related to health and attitude toward self and others were high sources of stress for males. Any program developed to aid male students in managing stress should probably emphasize dealing with those types of problems.

There were no grade differences in level of participation in activities and level of interest in activities; however, there was a significant sex effect in both areas. Females had a higher level of participation in activities as well as a higher interest in activities than males.

Recommendations

1. It is recommended that stress management programs for students be developed which take into account stressors that seem to be problematic for adolescents; they should not be carbon copies of adult programs. Teachers, students and parents should be made aware of the nature and manifestations of stress in adolescents. Difficulties with time management (especially in the area of school work) and intrapersonal concerns may be emphasized. School programs should be easily modified to allow use on an individual as well as a group basis. If school-wide programs are not feasible in some

areas, teachers should be educated to allow them to integrate stress-management themes in various areas of the curriculum. Parents can also serve as a valuable resource if they are made aware of the problems their children may be having in managing stress; they can complement the efforts of school personnel in monitoring the stress levels of students and in helping them cope with difficulties.

One component that should be included in any stress management program is that of evaluation. Some type of measurement should be used in order to evaluate the effectiveness of these programs in order to make modifications, if necessary.

2. It is recommended that stress levels of primary and elementary students be measured (with appropriate modifications to the scale) to identify stressors experienced by children at lower grade levels. This should lead to helping them develop more positive coping strategies (eg. simple relaxation techniques); a probable result may be children who learn at an early age how to adapt to stressful situations in a more positive manner. They may also learn to deal with school situations that may be perceived as highly stressful (eg. transition from elementary to junior high school). Stress management programs at all school levels should have a developmental, preventive approach. If used to complement intervention techniques used with students already experiencing high levels of stress, these may be quite effective in

the long term.

3. It is recommended that approaches to lessening stress in students be two-fold. The usual target for intervention is the individual, but such an approach may be more effective if supplemented by positive changes in the environment of the school. Providing social and emotional supports for students (eg. peer counselling, teacher advisors) and allowing more student input into decision-making (both at a classroom and school level) may help to lessen some of the school-related stress that adolescents experience. Extra-curricular activities in schools should be expanded to include pursuits that appeal to a wider range of student interests. It may be beneficial to elicit student input into what particular activities they would like to have made available.

4. It is recommended that factors not considered in this study, such as dating, sexual activity, pregnancy and sexually transmitted diseases (for example, herpes, AIDS) be explored as potential sources of stress. In addition, concerns about career and educational planning, as well as alcohol and drug abuse might be considered. Economic concerns, especially in regard to the extremely high unemployment rate of Newfoundland's youth, might also be examined, as well as concerns of students about family and community problems stemming from unemployment.

5. It is recommended that future research be conducted with adolescents in urban centers to identify any differences

in stress levels, stressors and coping strategies that may exist between them and their rural counterparts.

6. It is recommended that future research be conducted to investigate the differences between males and females in stress related to intrapersonal concerns. An analysis of male students' difficulties in this area may shed light on the reasons for the gender difference; investigation of the possible effects of socialization may be a promising area of study.

7. It is recommended that future research be carried out to ascertain whether there is a link between high stress levels and behavior problems (in home and school).

References

- Allen, S., & Hiebert, B. (1989). Stress and coping in adolescents. Unpublished master's thesis, University of Calgary, Alberta.
- Basch, C.E., & Kersch, T.B. (1986). Adolescent perceptions of stressful life events. Health Education, 17(3), 4-7.
- Beidel, D.C. (1988). Psychophysiological assessment of anxious emotional states in children. Journal of Abnormal Psychology, 97(1), 80-82.
- Boyle, G.J. (1987). Commentary: The role of intrapersonal psychological variables in academic school learning. Journal of School Psychology, 25(4), 389-392.
- Brotman Band, E., & Weisz, J.R. (1988). How to feel better when it feels bad: Children's perspectives on coping with everyday stress. Developmental Psychology, 24(2), 247-253.
- Calhoun, M.L., & Beattie, J. (1987). School competence needs of mildly handicapped adolescents. Adolescence, 22(87), 555-563.
- Chandler, L.A., Million, M.E., & Shermis, M.D. (1985). The incidence of stressful life events of elementary school-aged children. American Journal of Community Psychology, 13(6), 743-746.

- Compas, B.E., Davis, G.E., Forsythe, C.J., & Wagner, B.M. (1987). Assessment of major and daily stressful events during adolescence: The adolescent perceived events scale. Journal of Consulting and Clinical Psychology, 56(3), 534-541.
- Cullinan, D., Epstein, M.H., & Kauffman, J.M. (1984). Teachers' ratings of student behaviors: What constitutes behavior disorder in school? Behavioral Disorders, 10, 9-19.
- D'Aurora, D.L., & Fimian, M.J. (1988). Dimensions of life and school stress experienced by young people. Psychology in the Schools, 25, 44-53.
- Dickey, J.P., & Henderson, P. (1989). What children say about stress and coping in school. Health Education, 20(1), 14-17.
- Elkind, D. (1986). Stress and the middle grader. The School Counsellor, 33(3), 196-206.
- Elwood, S.W. (1987). Stressor and coping response inventories for children. Psychological Reports, 60, 931-947.
- Fimian, M.J., & Cross, A.H. (1986). Stress and burnout among preadolescent and early adolescent gifted students: A preliminary investigation. Journal of Early Adolescence, 6(3), 247-267.
- Forman, S.G., & O'Malley, P.L. (1984). School stress and anxiety intervention. School Psychology Review, 13(2), 162-170.

- Garton, A.F., & Pratt, C. (1987). Participation and interest in leisure activities by adolescent school children. Journal of Adolescence, 10, 341-351.
- Gibbs, N. (1989, April). How America has run out of time. Time, pp. 48-55.
- Healy, T.G., & Parish, R.S. (1986). Parental reports of stress in gifted and nongifted elementary students. Journal of Social Behavior and Personality, 1(4), 593-598.
- Hiebert, B. (1988). Controlling stress: A conceptual update. Canadian Journal of Counselling, 22(4), 226-239.
- Hurrelmann, K. (1984). Societal and organizational factors of stress on students in school. European Journal of Teacher Education, 7(2), 181-190.
- Johns, B., & Johns, M. (1983). Stress: It burns out kids, too. Learning, 1, 48-49.
- Miller, M.J., Wilcox, C.T., & Soper, B. (1985). Measuring hassles and uplifts among adolescents: A different approach to the study of stress. The School Counsellor, 23, 107-110.
- Moore, T. (1975). Stress in normal childhood. In L. Levi (Ed.), Society, stress and disease: Vol. 2 childhood and adolescence (pp. 170-180). London: Oxford University Press.

- Novy, D.M., & Donohue, S. (1985). The relationship between adolescent life stress events and delinquent conduct including conduct indicating a need for supervision. Adolescence, 10(78), 313-321.
- Omizo, M.M., Omizo, S.A., & Suzuki, L.A. (1988). Children and stress: An exploratory study of stressors and symptoms. The School Counsellor, 35(4), 267-274.
- Paterno, J. (1987, June). Children's identification of stress-related factors and coping strategies. Proceedings of the Annual American School Counsellor Association Elementary/ Middle School Guidance Conference. Columbus, OH.
- Patterson, J.M., & McCubbin, J.I. (1987). Adolescent coping style and behaviors: Conceptualization and measurement. Journal of Adolescence, 10, 163-186.
- Price, J.H. (1985). A model for explaining adolescent stress. Health Education, 16(3), 36-40.
- Shaw, J.A. (1987). Children in the military. Psychiatric Annals, 17(8), 539-544.
- Snow, W.H., Gilchrist, L., Schilling, R.F., Schinke, S.P., & Kelso, C. (1986). Preparing students for junior high school. Journal of Early Adolescence, 6(2), 127-137.
- Sterling, S., Cowen, E.L., Weissberg, R.P., Lotyczewski, B.S., & Boike, M. (1985). Recent stressful life events and young children's school adjustment. American Journal of Community Psychology, 13(1), 87-98.

- Tolan, P. (1986, August). Types of stress and transitions and adolescent self image. Proceedings of the 94th Annual Convention of the American Psychological Association. Washington, D.C.
- Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Stress, social support, and behavior symptoms in middle childhood. Journal of Clinical Psychology, 16(3), 204-211.
- Wilson, C.F. (1980). Stress profile for students. San Diego, California: The Wright Group. (This is a published stress scale).
- Yamamoto, K., & Byrnes, D.A. (1987). Primary children's ratings of the stressfulness of experiences. Journal of Research in Childhood Education, 2(2), 117-121.
- Yamamoto, K., Soliman, A., Parson, J., & Davies, O.L. (1987). Voices in unison: Stressful events in the lives of children in six countries. Journal of Child Psychology and Psychiatry, 28(6), 855-864.

APPENDIX A**Initial Item Pool**

1. I worry about my studies.
2. I am satisfied with my marks in school.
3. I don't have enough time to get everything done.
4. I get angry when things don't go my way.
5. Other people tell me what to do.
6. I feel sad.
7. I am confused about things going on around me.
8. I feel very different from others.
9. I don't care about a lot of things.
10. I am jealous of other people.
11. I can talk about my feelings.
12. I get excited about good things.
13. I am an energetic, happy and active person.
14. I am relaxed.
15. I am sensitive to others.
16. I have an idea of what the future may hold for me.
17. I get frequently sick.
18. I cannot communicate easily with other people.
19. I feel isolated and alone.
20. I keep my feelings inside.
21. I get angry easily.
22. I have a lot of aches and pains.
23. I can't concentrate.
24. I cannot seek/find other people for support.
25. I feel frightened a lot.
26. I worry about storms and animals.
27. I don't like myself.
28. I speak loudly.
29. If people are talking and the topic doesn't interest me, I try to change the conversation to something I like.
30. If people are talking and the topic doesn't interest me, I try to listen and try to join in later.
31. I have many hobbies and interests.
32. I can wait in lines easily.

- 33. I always move, eat, walk quickly.
- 34. I care more about getting things than doing things.
- 35. I am always in a rush and can't seem to get everything done.
- 36. I am too busy to relax.
- 37. Lately I get more and more done in less and less time.
- 38. I listen to music to relax.
- 39. I have too much homework to do.
- 40. I have trouble getting all my homework done.
- 41. I am too busy.
- 42. I am bored in school.
- 43. Once I am out of school, I'm bored.
- 44. I need more hobbies and outlets.
- 45. I need help scheduling my time.
- 46. I am in too many activities in school.
- 47. My social life interferes with my studies.
- 48. My studies interfere with my social life.
- 49. I have too many distractions.
- 50. I always have to be doing something.
- 51. I have trouble sitting still.
- 52. I have trouble relaxing in school.
- 53. I have trouble relaxing at home.
- 54. I am especially bothered by exams.
- 55. I have headaches, stomach aches.
- 56. I have outlets for my tensions.
- 57. I have people I can go to with problems or questions I might have.
- 58. I like being by myself.
- 59. I get left out of activities.
- 60. I have a lot of friends.
- 61. I am easily led by others.
- 62. I tell my friends what to do.
- 63. Family problems upset me.
- 64. I get anxious before a test.
- 65. I feel sick to my stomach when I think about school.

- 66. I find it hard to fall asleep.
- 67. I have a lot of headaches.
- 68. I'm tired when I get up in the morning.
- 69. I get tired in school.
- 70. I find it difficult to concentrate in school.
- 71. Changes that occur in my body make me feel anxious.
- 72. I do things that get me into trouble at school.
- 73. I have trouble understanding what the teacher expects of me.
- 74. Things worry and upset me at school.
- 75. It takes a long time to complete written work.
- 76. I get along with my teacher.
- 77. I have to be scolded by the teacher.
- 78. I compete with others in my class for marks.
- 79. I see myself as a good student.
- 80. My work is often interrupted.
- 81. I can talk comfortably to my teacher.
- 82. I feel that most people are doing better in school than I am.
- 83. I'm not pleased with my school work.
- 84. Being happy in school depends on my grades.
- 85. I think my teacher is fair.
- 86. I have too much homework.
- 87. I have too many things to do.
- 88. I am rushed at school.
- 89. I waste time.
- 90. I get to school on time.
- 91. I make good use of my time.
- 92. I don't have time to choose what I want to do.
- 93. I get behind in my work.
- 94. I am expected to do too many chores at home.
- 95. I let things outside of school take up my time.
- 96. I take part in social groups outside the school.
- 97. I argue with my friends.
- 98. I feel that people don't understand me.

- 99. I feel that I am an important part of my family.
- 100. I feel that my home is a safe, comfortable place for me.
- 101. I feel that I am popular with my friends.
- 102. I get along well with my friends.
- 103. I feel that my parents expect too much of me.
- 104. I feel that my parents disapprove of me.
- 105. I have lots of friends.
- 106. I think that people don't like me.
- 107. I talk to my parents.
- 108. My friends call me names.
- 109. I don't keep a friend very long.
- 110. I depend on my brothers and sisters.
- 111. I feel that my opinions are not taken seriously.
- 112. I prefer to be by myself.
- 113. I'd like people to leave me alone.
- 114. I feel awkward around the opposite sex.
- 115. I have problems keeping a friend.
- 116. I get picked on a lot.
- 117. I feel left out.
- 118. Things that happen at home upset me.
- 119. My friends know more about sex than I do.
- 120. I feel that I can't do anything about the way I am.
- 121. I feel that I am doing what everyone else wants me to do.
- 122. I don't go along with the group.
- 123. I let people talk me into doing things I don't want to do.
- 124. I let other people interrupt my work.
- 125. My parents want me to get involved in many activities.
- 126. I can control things that happen.
- 127. I am willing to face the consequences for my actions.
- 128. I can accept responsibility for something I do.
- 129. I blame others when things do not go the way I want them to.

- 130. I am willing to discuss what happened with someone.
- 131. I can think for myself.
- 132. I have difficulty/trouble making decisions.
- 133. I have a trusted adult to talk to.
- 134. I have the support of adults at home and school.
- 135. Daydreaming distracts me while I am studying.
- 136. My teachers criticize my written work.
- 137. My subjects are interesting and meaningful to me.
- 138. I would study harder if I were given more freedom to choose subjects that I like.

APPENDIX B**Student Scales**

Student Scale I

Male _____

Female _____

This is not a test and there are no right or wrong answers. The scale for rating the items is listed below. To complete this exercise, simply rate the following items by circling the number that most clearly describes **you at the present time**.

Example:

I like talking on the telephone. 1 2 3 4 5

Answer: "Often like me"

I watch too much television. 1 2 3 4 5

Answer: "Seldom like me"

KEY: 1 = Not like me
 2 = Seldom like me
 3 = Sometimes like me
 4 = Often like me
 5 = Always like me

- | | | | | | | |
|----|--|---|---|---|---|---|
| 1. | I don't care about a lot of things. | 1 | 2 | 3 | 4 | 5 |
| 2. | I feel different from others. | 1 | 2 | 3 | 4 | 5 |
| 3. | I have trouble getting all my homework done. | 1 | 2 | 3 | 4 | 5 |
| 4. | I have no idea of what the future holds for me. | 1 | 2 | 3 | 4 | 5 |
| 5. | I get excited when good things happen to me. | 1 | 2 | 3 | 4 | 5 |
| 6. | I am too sensitive to what others say. | 1 | 2 | 3 | 4 | 5 |
| 7. | I don't have enough time to get everything done. | 1 | 2 | 3 | 4 | 5 |
| 8. | I tell other people what to do. | 1 | 2 | 3 | 4 | 5 |
| 9. | I cannot concentrate on my studies. | 1 | 2 | 3 | 4 | 5 |

KEY: 1 = Not like me
 2 = Seldom like me
 3 = Sometimes like me
 4 = Often like me
 5 = Always like me

- | | | | | | |
|---|---|---|---|---|---|
| 10. I find it easy to talk to other people. | 1 | 2 | 3 | 4 | 5 |
| 11. I have too many hobbies and interests that take up my time. | 1 | 2 | 3 | 4 | 5 |
| 12. I feel that my ideas are not taken seriously. | 1 | 2 | 3 | 4 | 5 |
| 13. I find it hard to go to sleep. | 1 | 2 | 3 | 4 | 5 |
| 14. I do things that get me into trouble. | 1 | 2 | 3 | 4 | 5 |
| 15. I need help scheduling my time. | 1 | 2 | 3 | 4 | 5 |
| 16. I can't do anything about the way I am. | 1 | 2 | 3 | 4 | 5 |
| 17. I find my subjects in school are boring. | 1 | 2 | 3 | 4 | 5 |
| 18. I feel that people expect too much of me. | 1 | 2 | 3 | 4 | 5 |
| 19. I am in many activities in school. | 1 | 2 | 3 | 4 | 5 |
| 20. I let others talk me into doing things I don't want to do. | 1 | 2 | 3 | 4 | 5 |
| 21. I feel sick when I think about my studies. | 1 | 2 | 3 | 4 | 5 |
| 22. I get along with people. | 1 | 2 | 3 | 4 | 5 |
| 23. I think my social life interferes with my studies. | 1 | 2 | 3 | 4 | 5 |
| 24. I feel that I can control what happens to me. | 1 | 2 | 3 | 4 | 5 |
| 25. I feel that most people are doing better in school than I am. | 1 | 2 | 3 | 4 | 5 |
| 26. I get picked on in school. | 1 | 2 | 3 | 4 | 5 |

KEY: 1 = Not like me
 2 = Seldom like me
 3 = Sometimes like me
 4 = Often like me
 5 = Always like me

- | | | | | | |
|--|---|---|---|---|---|
| 27. I have too many distractions. | 1 | 2 | 3 | 4 | 5 |
| 28. I blame others when things don't go right. | 1 | 2 | 3 | 4 | 5 |
| 29. I worry about my health. | 1 | 2 | 3 | 4 | 5 |
| 30. I have friends I can be with after school. | 1 | 2 | 3 | 4 | 5 |
| 31. I waste time at home. | 1 | 2 | 3 | 4 | 5 |
| 32. I can think for myself. | 1 | 2 | 3 | 4 | 5 |
| 33. I worry about the health of my family or friends. | 1 | 2 | 3 | 4 | 5 |
| 34. I compete with others in my class for marks. | 1 | 2 | 3 | 4 | 5 |
| 35. I make good use of my time in school. | 1 | 2 | 3 | 4 | 5 |
| 36. I worry about not being able to finish my education. | 1 | 2 | 3 | 4 | 5 |
| 37. I have too many problems. | 1 | 2 | 3 | 4 | 5 |
| 38. I think that people are fair to me. | 1 | 2 | 3 | 4 | 5 |
| 39. I get behind in my work. | 1 | 2 | 3 | 4 | 5 |
| 40. I have enough freedom. | 1 | 2 | 3 | 4 | 5 |

Student Scale II

Here are some ways children act when they are faced with problems or things that annoy them. Simply rate the following items by circling the number that most closely describes how you act at the present time.

KEY: 1 = Not like me
 2 = Seldom like me
 3 = Sometimes like me
 4 = Often like me
 5 = Always like me

- | | | | | | |
|--|---|---|---|---|---|
| 1. I can talk to others about how I feel. | 1 | 2 | 3 | 4 | 5 |
| 2. I cry to feel better. | 1 | 2 | 3 | 4 | 5 |
| 3. I know how to relax. | 1 | 2 | 3 | 4 | 5 |
| 4. I complain when things don't go right. | 1 | 2 | 3 | 4 | 5 |
| 5. I can accept change by taking things one step at a time. | 1 | 2 | 3 | 4 | 5 |
| 6. I like to be by myself. | 1 | 2 | 3 | 4 | 5 |
| 7. I find that a hobby or interest takes my mind off my worries. | 1 | 2 | 3 | 4 | 5 |
| 8. I over-react when I feel nervous. | 1 | 2 | 3 | 4 | 5 |
| 9. I am good at thinking out solutions for my problems. | 1 | 2 | 3 | 4 | 5 |
| 10. I try to keep myself in good physical condition. | 1 | 2 | 3 | 4 | 5 |
| 11. I think that doing nothing is a good way of solving a problem. | 1 | 2 | 3 | 4 | 5 |
| 12. I eat a well-balanced diet. | 1 | 2 | 3 | 4 | 5 |
| 13. I find myself sulking when things do not go my way. | 1 | 2 | 3 | 4 | 5 |
| 14. I can control my feelings. | 1 | 2 | 3 | 4 | 5 |

KEY: 1 = Not like me
 2 = Seldom like me
 3 = Sometimes like me
 4 = Often like me
 5 = Always like me

- | | | | | | |
|--|---|---|---|---|---|
| 15. I try to find ways to make things better. | 1 | 2 | 3 | 4 | 5 |
| 16. When I need support, I pray for it. | 1 | 2 | 3 | 4 | 5 |
| 17. I listen to music to relax. | 1 | 2 | 3 | 4 | 5 |
| 18. I get plenty of sleep. | 1 | 2 | 3 | 4 | 5 |
| 19. I am willing to discuss what happens to me with someone. | 1 | 2 | 3 | 4 | 5 |
| 20. I pretend that I don't have any problems, even when I really do. | 1 | 2 | 3 | 4 | 5 |
| 21. I stand up for my rights. | 1 | 2 | 3 | 4 | 5 |
| 22. I make good use of time. | 1 | 2 | 3 | 4 | 5 |
| 23. I get regular exercise. | 1 | 2 | 3 | 4 | 5 |

Student Scale III

Here are some activities children your age do. Simply rate the following items by circling the number that most closely describes the activities you participate in.

KEY: 1 = Seldom
 2 = Once a month
 3 = Once a week
 4 = Almost every day

- | | | | | |
|---|---|---|---|---|
| 1. Watching television. | 1 | 2 | 3 | 4 |
| 2. Going to the arcade. | 1 | 2 | 3 | 4 |
| 3. Hanging out with friends (at home or outside). | 1 | 2 | 3 | 4 |
| 4. Homework. | 1 | 2 | 3 | 4 |
| 5. Church and church groups. | 1 | 2 | 3 | 4 |
| 6. Scouts/Guides/Cadets. | 1 | 2 | 3 | 4 |
| 7. Music lessons and practice. | 1 | 2 | 3 | 4 |
| 8. Organized sports (team or individual competition). | 1 | 2 | 3 | 4 |
| 9. Playing sports with friends (not organized). | 1 | 2 | 3 | 4 |
| 10. Talking on the telephone. | 1 | 2 | 3 | 4 |
| 11. Preparing meals. | 1 | 2 | 3 | 4 |
| 12. baby-sitting brothers/sisters. | 1 | 2 | 3 | 4 |
| 13. Work for pay. | 1 | 2 | 3 | 4 |
| 14. Cleaning my room, clothes, the house. | 1 | 2 | 3 | 4 |
| 15. Reading for fun (books, magazines). | 1 | 2 | 3 | 4 |
| 16. Shopping. | 1 | 2 | 3 | 4 |

KEY: 1 = Seldom
 2 = Once a month
 3 = Once a week
 4 = Almost every day

- | | | | | |
|--------------------------------|---|---|---|---|
| 17. Volunteer school programs. | 1 | 2 | 3 | 4 |
| 18. Play on home computer. | 1 | 2 | 3 | 4 |

Student Scale IV

Here are some activities children your age do. Simply rate the following items by circling the number that most closely describes **yours** interest in these activities.

KEY: 1 = No interest
 2 = A little interest
 3 = A lot of interest

- | | | | |
|---|---|---|---|
| 1. Watching television. | 1 | 2 | 3 |
| 2. Cleaning my room, clothes, the house. | 1 | 2 | 3 |
| 3. Reading for fun (books, magazines). | 1 | 2 | 3 |
| 4. Hanging out with friends (at home or outside). | 1 | 2 | 3 |
| 5. Church and church groups. | 1 | 2 | 3 |
| 6. Playing on home computer. | 1 | 2 | 3 |
| 7. Scouts/Guides/Cadets. | 1 | 2 | 3 |
| 8. Volunteer-School Programs. | 1 | 2 | 3 |
| 9. Music lessons and practice. | 1 | 2 | 3 |
| 10. Playing sports with friends (not organized). | 1 | 2 | 3 |
| 11. Homework. | 1 | 2 | 3 |
| 12. Talking on the telephone. | 1 | 2 | 3 |
| 13. Preparing meals. | 1 | 2 | 3 |
| 14. Organized sports (teams or individual competition). | 1 | 2 | 3 |
| 15. Work for pay. | 1 | 2 | 3 |
| 16. Going to the arcade. | 1 | 2 | 3 |
| 17. Shopping. | 1 | 2 | 3 |
| 18. Babysitting brothers/sisters. | 1 | 2 | 3 |

APPENDIX C

Sources Used in the Development of the Four Scales

Intrapersonal (Health, Attitudinal) Items

- Hurrelmann, K. (1984). Societal and organizational factors of stress on students in school. European Journal of Teacher Education, 7(2), 181-190. [#25]
- Karr, S.K., & Johnson, P.L. (1987). Measuring children's stress: An evaluation of methods. (Report No. CG 020 114). Paper presented at the Annual Meeting of the National Association of School Psychologists (19th, New Orleans, LA, March 4-8, 1987). (ERIC Document Reproduction Service No. ED 265 072). [#22, 2, & 6]
- Omizo, M.M., Omizo, S.A., & Suzuki, L.A. (1988). Children and stress: An exploratory study of stressors and symptoms. The School Counsellor, 35(4), 267-274.

Interpersonal

- Hurrelmann, K. (1984). Societal and organizational factors of stress on students in school. European Journal of Teacher Education, 7(2), 181-190. [#18 & 34]
- Karr, S.K., & Johnson, P.L. (1987). Measuring children's stress: An evaluation of methods. (Report No. CG 020 114). Paper presented at the Annual Meeting of the National Association of School Psychologists (19th, New Orleans, LA, March 4-8, 1987). (ERIC Document Reproduction Service No. ED 285 072). [#18]
- Omizo, M.M., Omizo, S.A., & Suzuki, L.A. (1988). Children and stress: An exploratory study of stressors and symptoms. The School Counsellor, 35(4), 267-274.
- Spirito, A., Stark, L.H., & Williams, C. (1987). Coping in children and adolescents: Development of a brief scale. (Report No. CG 019 878). Paper presented at the Annual Meeting of the Society of Behavioral Medicine (Washington, DC, March 19-22, 1987). (ERIC Document Reproduction Service No. ED 282 114). [#9]
- Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Stress, social support, and behavior symptoms in middle child-

hood. Journal of Clinical Child Psychology, 16(3), 204-211. [#10 & 30]

Time Management

Spirito, A., Stark, L.H., & Williams, C. (1987). Coping in children and adolescents: Development of a brief scale. (Report No. CG 019 878). Paper presented at the Annual Meeting of the Society of Behavioral Medicine (Washington, DC, March 19-22, 1987). (ERIC Document Reproduction Service No. ED 282 114).

Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Stress, social support, and behavior symptoms in middle childhood. Journal of Clinical Child Psychology, 16(3), 204-211. [#3, 15, 19, 23 & 35]

Locus of Control

Fimian, M.J., & Cross, A.H. (1986). Stress and burnout among preadolescent and early adolescent gifted students. A preliminary investigation. Journal of Early Adolescence, 6(3), 247-267.

Grannis, J.C. (1987). Young adolescents' stress in school. Self-reported distress, and academic achievement: A longitudinal study in an urban middle school. A paper presented at an Annual Meeting of the American Educational Research Association. Washington, DC, April 20-24. (ERIC Document Reproduction Service ED 288 121).

Healy, T.G., & Parish, R.S. (1986). Parental reports of stress in gifted and nongifted elementary students. Journal of Social Behavior and Personality, 1(4), 593-598.

Honig, A.S. (1986). Stress and coping in children (part 2). Interpersonal Family Relationships, 41(5).

Coping

Brotman Band, E., & Weisz, J.R. (1988). How to feel better when it feels bad: Children's perspectives on coping with everyday stress. Developmental Psychology, 24(2), 247-253.

primary control direct problem solving - #21, 15

secondary control -

social/spiritual support #16, 1 & 19

emotion focused crying #2

cognitive avoidance #13 & 4

pure cognition #3, 20 & 14

doing nothing #11

Kurdek, L.A., & Sinclair, R.J. (1988). Adjustment of young adolescents in two-parent nuclear, stepfather, and mother-custody families. Journal of Consulting and Clinical Psychology, 56(1), 91-96.

Spirito, A., Stark, L.H., & Williams, C. (1987). Coping in children and adolescents: Development of a brief scale. (Report No. CG 019 878). Paper presented at the Annual Meeting of the Society of Behavioral Medicine (Washington, DC, March 19-22, 1987). (ERIC Document Reproduction Service No. ED 282 114).

Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Stress, social support, and behavior symptoms in middle childhood. Journal of Clinical Child Psychology, 16(3), 204-211. [#19]

Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Measuring children's coping. American Journal of Orthopsychiatry, 57(4), 548-560.

Focus - Self #9

Function - Problem-solving #7 & 6

Function - Emotion management #3

Mode -

Information Seeking #15 & 19

Support Seeking #1 & 16

Direct Action #2, 7, 10, 12, 17, 18 & 24
 Inhibition of Action #4 & 13
 Intrapsychic #3, 7 & 17

Participation and Interest in Activities

- Elwood, S.W. (1987). Stressor and coping response inventories for children. Psychological Reports, 60, 931-947.
- Fimian, M.J., & Cross, A.H. (1986). Stress and burnout among preadolescent and early adolescent gifted students: A preliminary investigation. Journal of Early Adolescence, 6(3), 247-267.
- Garton, A.F., & Pratt, C. (1987). Participation and interest in leisure activities by adolescent school children. Journal of Adolescence, 10, 341-351.

Other Relevant Articles

- D'Aurora, D.L., & Fimian, M.J. (1988). Dimensions of life and school stress experienced by young people. Psychology in the Schools, 25, 44-53.
- Elkind, D. (1986). Stress and the middle grader. The School Counsellor, 33(3), 196-206.
- Simmons, R.G., Burgeson, R., Carlton-Ford, S., & Blyth, D.A. (1987). The impact of cumulative change in early adolescence. Child Development, 58, 1220-1234.
- Yamamoto, K., & Byrnes, D.A. (1987). Primary children's rating of the stressfulness of experiences. Journal of Research in Childhood Education, 2(2), 117-121.

APPENDIX D**Letter to the Superintendent**

303 Portugal Cove Place
St. John's, NF
A1B 2N8

May 5, 1989

Dr. Larry Moss
Green Bay Integrated School Board
Springdale, NF
A0J 1T0

Dear Dr. Moss:

I am presently setting up a research project involving a study of stress factors as perceived by junior high school students. Manifestations of stress, coping strategies, time usage and selected biographical variables are being investigated and compared.

In order to obtain a representative sample of students at the junior high level I would appreciate being able to carry out this research at four schools in the Green Bay Integrated School District.

This study is part of a larger study being carried out by myself and Ms. Carolyn Mate, coordinated and supervised by Dr. L. Klas, Department of Educational Psychology, Memorial University.

A copy of a parent permission form, as well as a copy of the ethical procedures approved by the Ethics Committee of the Faculty of Education at Memorial University, is enclosed for your reference.

It is hoped that the data collection for the study will be completed by June 1st of this school years.

Yours sincerely,

Glenys Wellman
Encls.

APPENDIX E**Letter to the Ethics Committee**



MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Educational Psychology
Faculty of Education

Telex: 016-4101
Tel.: (709) 737-8611

March 7, 1989

TO: Dr. Glenn Sheppard
Chairman, Faculty of Education Ethics Committee

FROM: Dr. L. Klas, Ms. Carolyn Mate, Ms. Glenys Wellman

SUBJECT: Ethical procedure for thesis research of Ms. Carolyn Mate & Ms. Glenys Wellman (L. Klas, Supervisor)

Attached is a point form outline of the ethical procedures for the thesis research being developed by Ms. Mate and Ms. Wellman, and coordinated and supervised by Dr. L. Klas, Professor, Department of Educational Psychology. In addition we have attached a copy of the parent permission form.

The research project studies stress in children in elementary and middle school years. Manifestations of stress, coping strategies, time usage and selected biographical variables are being investigated and compared.

We feel that the procedures being used in the project satisfy the ethical expectancies of human subject research and we would welcome your committee's review.

1. Permission has been granted to carry out this study by the school boards and school administration.
2. A permission form (attached) will be sent out to the parents. The following information will be given:
 - (i) The parents will be informed of the general nature of the research study. The format of the scale to be administered to their child will also be explained.
 - (ii) There will be an opportunity given to the parents to opt in through the distribution and subsequent return of the permission forms to the researcher.
3. The participation of the children themselves is entirely voluntary in that they can withdraw at anytime.
4. The confidentiality of the subjects will be maintained through the following means:
 - (i) No names will appear on any scale form.
 - (ii) The data obtained will be used only by the primary researcher. All data will be analyzed and presented in a group fashion rather than on an individual basis.
5. In order to obtain biographical information that matches the appropriate subject a coding system will be implemented during the administration procedures.
6. Administration Procedures:
 - (i) Administration Time: approximately 30 minutes.
 - (ii) Introduction of researchers. The purpose of the study will be explained in a general sense to the children. The children will be reassured that their responses will be confidential and that the primary researcher is the only one to use the information. They will be given the opportunity to opt out.
 - (iii) During this introductory period the other researcher will confer with the classroom teacher on the seating arrangement of the students. Each form will be coded with a number on the back.

- (iv) The distribution of the scales will follow the seating arrangement and coding system. 95
- (v) The scales will be explained using sample items. This explanation will facilitate the children's understanding of how to interpret the five point Likert rating format.
- (vi) The children will be given an opportunity for questions and further clarification of scale items.
- (vii) The completed forms will be returned to the researchers and kept in confidential files.

Carolyn Mate

Glenys Wellman

Memorial University of Newfoundland

Faculty Committee for Ethical Review of
Research Involving Human Subjects

Certificate of Approval

Investigator: L. Klas

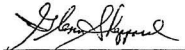
Department/Division/Institute Educational Psychology

Co-investigator(s) Ms. Carolyn Mate and Ms. Glenys Wellman

Title of Research: Research on Stress in Children

Approval Date: April 28, 1989

The Ethics Review Committee has reviewed the protocol and procedures as described in this research proposal and we conclude that they conform to the University's guidelines for research involving human subjects.



Dr. Glenn W. Sheppard
Chairman
Ethics Review Committee

Members: Dr. Leroy Klas, Professor, Department of
Educational Psychology

Dr. Amarjit Singh, Professor, Department
of Educational Foundations

Dr. Phil Warren, Professor, Department of
Educational Administration

APPENDIX F**Parent Permission Form**

Parent Permission Form

We are hoping to start a research programme in your child's school in the near future. The overall purpose of the research is to help us to find out:

1. the important causes of stress in adolescents and how stress is demonstrated;
2. the methods by which adolescents cope with stress; and
3. how we can help adolescents to cope better with the array of causes of stress.

The survey will ask adolescents to rate common causes of stress in their lives. The students will also be asked to indicate how much time they spend on selected extracurricular activities. All responses are strictly confidential.

The survey would be conducted with Junior High students. One 30-minute session of your child's time would be involved. Participation, in all aspects of the study, will be entirely voluntary. There will be a follow-up study involving a rating scale to be completed by teachers. Only a select sample of students will be involved in this aspect of the research and only the researcher would have access to the students' scores.

If you have any questions or concerns about any aspects of the proposed survey, or your child's involvement in it, please contact the school board.

The school board and school officials, as well as the Faculty of Education Ethics Committee at Memorial University, have already given general approval for the conducting of this research and survey. If you agree with your child's participation in this study, please indicate on the form below and return the lower portion to the school.

Glenys Wellman, Primary Researcher

Carolyn Mate, Researcher

Members of the Research Team:

Dr. Leroy Klas, Educational Psychology, MUN

Dr. Art Sullivan, Psychology, MUN

Mr. Tony Simmonds, Psychology, MUN

Mr. Dave Brazil, Youth Advisory Council

_____ I agree to have my child participate in the research programme described above.

OR

_____ I would rather not have my child participate in this research.

Parent/Guardian's Signature: _____



